# SERVICE MANUAL

**SM 0064**

## Mod. PD1 A

**CMP4121HDE**
**CMP4202E**
**42PMA400E**

### Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Plasma display.
Be sure to read cautionary items described in the manual to maintain safety before servicing.

### Serviceman Warning

1. Since Panel Module and Front Filter are made of glass, handling of the broken Module and Filter shall be handled carefully in order not to be injured.
2. Replacment work shall be started after the Panel Module and the AC/DC Power supply become sufficiently cool.
3. Special care shall be taken to the display area in order not to damage its surface.
4. The Panel Module shall not to be touched with bare hand to protect its surface from stains.
5. It is recommended using clean soft gloves during the replacment work in order to protect not only the display area of the Panel Module but also the serviceman himself.
6. The Chip Tube of Panel Module (located upper left of the back) and flexible cables connecting Panel glasses to drive circuit PWBs are very weak, so sufficient care should be taken so as not to break them. If you break the Chip Tube, the Panel will not display any more.

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**SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.**

## Plasma Display

**October 2002**

## 1. Features

- 42 inches Hi-Vision compatible high-definition color plasma display panel.
- Newly developed Multi-scanning converter provides a multi-scan coverage of TV signals through to PC analog signals (15 kHz to UXGA(107 kHz)).
- Large high-quality display images free from color miss-convergence and display distortion, as well as from geomagnetic effect and the magnetic effect of ambient power lines.
- Multimedia input support
  Two minis D-sub terminal have been provided for RGB input. It is possible to switch between RGB signals and component signals* from the Menu screen or the remote controller, therefore use is possible with equipment ranging from personal computer to imaging device.
  *It is possible when the VIDEO unit is inserted.

## 2. Specifications

| | | |
|---|---|---|
| ***PDP Module*** | | 42 inch ALIS PDP panel (aspect ratio 16:9)<br>Description FPF42C128128UB<br>Pixel pitch 0.90 mm(H) x 0.51 mm(V)<br>Pixel structure RGB striped |
| ***Input Signal*** | ***RGB 1***<br>***RGB 2***<br>(mD-sub15p) x 2 | Video : 0.7 Vp-p<br>Sync. : Separate H/V, TTL level<br>Composite H/V, TTL level<br>Sync. on Green at 0.30 Vp-p<br><br>*: A Component input is attained at a D-sub terminal. |
| | ***Video 1***<br>(RCAx1,<br>S-terminalx1) | ***Composite Video or S-video (forS1, S2)***<br>NTSC3.58, NTSC4.43, PAL, M-PAL, N-PAL, PAL60,SECAM<br>Video : Composite 1.0 Vp-p<br>S-video Y: 1.0 Vp-p, C:0.29Vp-p<br>Sync. : Composite sync |
| | ***Video 2***<br>(RCAx3) | ***Component Video***<br>Y,PB,PR or Y,CB,CR:<br>(480I, 480P, 576I, 576P, 720P, 1080I, 1035I)<br>Video: Y : 1.0 Vp-p<br>Pb/Cb,Pr/Pr : 0.7 Vp-p<br>Sync. : Superimposed with Y signals |
| | ***SCART (VIDEO1,VIDEO2)*** | PAL,NTSC Video : R/G/B 0.7Vp-p (Video2)<br>Sync : Composite Sync 1.0Vp-p (Video1) |
| ***Output Signal*** | ***Video 1***<br>(RCAx1) | ***Composite Video***<br>Loop-through of input video 1 signal |
| ***Colors*** | | 16.777 million |
| ***Synchronization*** | | Horizontal : 15 –107 kHz<br>Vertical : 50 – 85 Hz |
| ***Resolution*** | | Horizontal : 1024 dots (max.)<br>Vertical : 1024 lines (max.) |
| ***Viewable Image Size*** | | 42 inches (1060 mm), diagonal (typical) |
| ***Viewable Image Area*** | | Horizontal : 922 mm (typical)<br>Vertical : 522 mm (typical) |
| ***Color Temperature*** | | 1: Cool 2: Normal 3: Warm 4:User |
| ***Warm-up Time*** | | 30 minutes to reach optimum performance level. |
| ***Power Supply*** | | AC 100 - 120 / 200 – 240 V (3.7A /2.0A) 50/60 Hz<br>(automatically selected)<br>Power Consumption : 350 W (typical, without sound)<br>(provided with power save circuit.) |
| ***Dimensions*** | | 1030 (W) × 636 (H) × 89 (D) mm |
| ***Weight*** | | 31 kg (approx.) exclude option stand |
| ***Environmental Condition*** | | Operation / Storage<br>Temperature 5ºC to 35ºC / −15ºC to 60ºC<br>Humidity 20% to 80% / 20% to 90% |

# 3. Lead free solder

This product uses lead free solder (unleaded) to help preserve the environment. Please read these instructions before attempting any soldering work.

**Caution:** Always wear safety glasses to prevent fumes or molten solder from getting into the eyes. Lead free solder can splatter at high temperatures (600 ℃)

### ■ Lead free solder indicator

Printed circuit boards using lead free solder are engraved with an "F."

### ■ Properties of lead free solder

The melting point of lead free solder is 40-50 ℃ higher than leaded solder.

### ■ Servicing solder

Solder with an alloy composition of Sn-3.0Ag-0.5Cu or Sn-0.7Cu is recommended.
Although servicing with leaded solder is possible, there are a few precautions that have to be taken. (Not taking these precautions may cause the solder to not harden properly, and lead to consequent malfunctions.)

**Precautions when using leaded solder**

- Remove all lead free solder from soldered joints when replacing components.
- If leaded solder should be added to existing lead free joints, mix in the leaded solder thoroughly after the lead free solder has been completely melted (do not apply the soldering iron without solder).

### ■ Servicing soldering iron

A soldering iron with a temperature setting capability (temperature control function) is recommended.
The melting point of lead free solder is higher than leaded solder. Use a soldering iron that maintains a high stable temperature (large heat capacity), and that allows temperature adjustment according to the part being serviced, to avoid poor servicing performance.

**Recommended soldering iron:**

- Soldering iron with temperature control function (temperature range: 320-450 ℃)

Recommended temperature range per part:

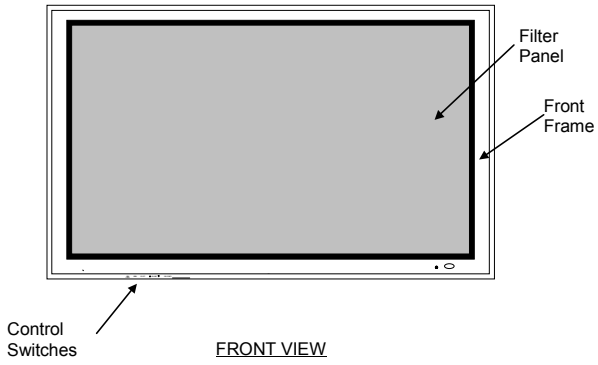
| Part | Soldering iron temperature |
|---|---|
| Mounting (chips) on mounted PCB | 320 ±30℃ |
| Mounting (chips) on empty PCB | 380 ±30℃ |
| Chassis, metallic shield, etc. | 420 ±30℃ |

**The PWB assembly which has used lead free solder**

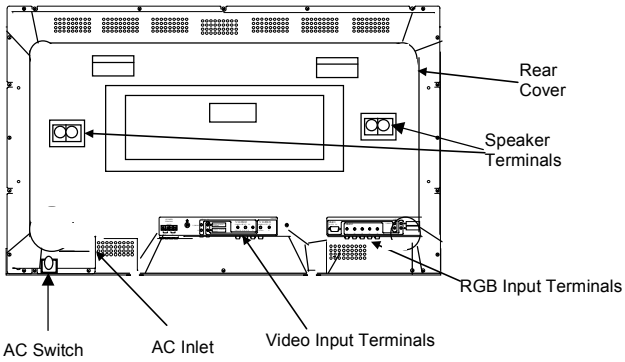
① SIGNAL board
② VIDEO board
③ JOINT board
④ AUDIO board/FILTER board/LED,RECEIVER board/TACT SW board/SPEAKER terminal board

# 4. Names of each part

## ● Outlook

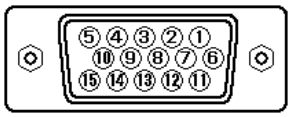



FRONT VIEW




REAR VIEW

## ● Input terminal(D-sub connector)




| PinNo | Signal |
|---|---|
| 1 | Red Video, ( PR/CR ) |
| 2 | Green Video (Sync. optional), (Y) |
| 3 | Blue Video ($P_B/C_B$) |
| 4 | No connection |
| 5 | No connection |
| 6 | Red Ground ( $P_R$ / $C_R$ Ground) |
| 7 | Green Ground ( Y Ground) |
| 8 | Blue Ground ( $P_B$ / $C_B$ Ground) |
| 9 | No connection |
| 10 | Ground |
| 11 | No connection |
| 12 | [SDA] |
| 13 | H.Sync. or H/V composite |
| 14 | V.Sync. [V.CLK] |
| 15 | [SCL] |

( ) :with RGB component input.

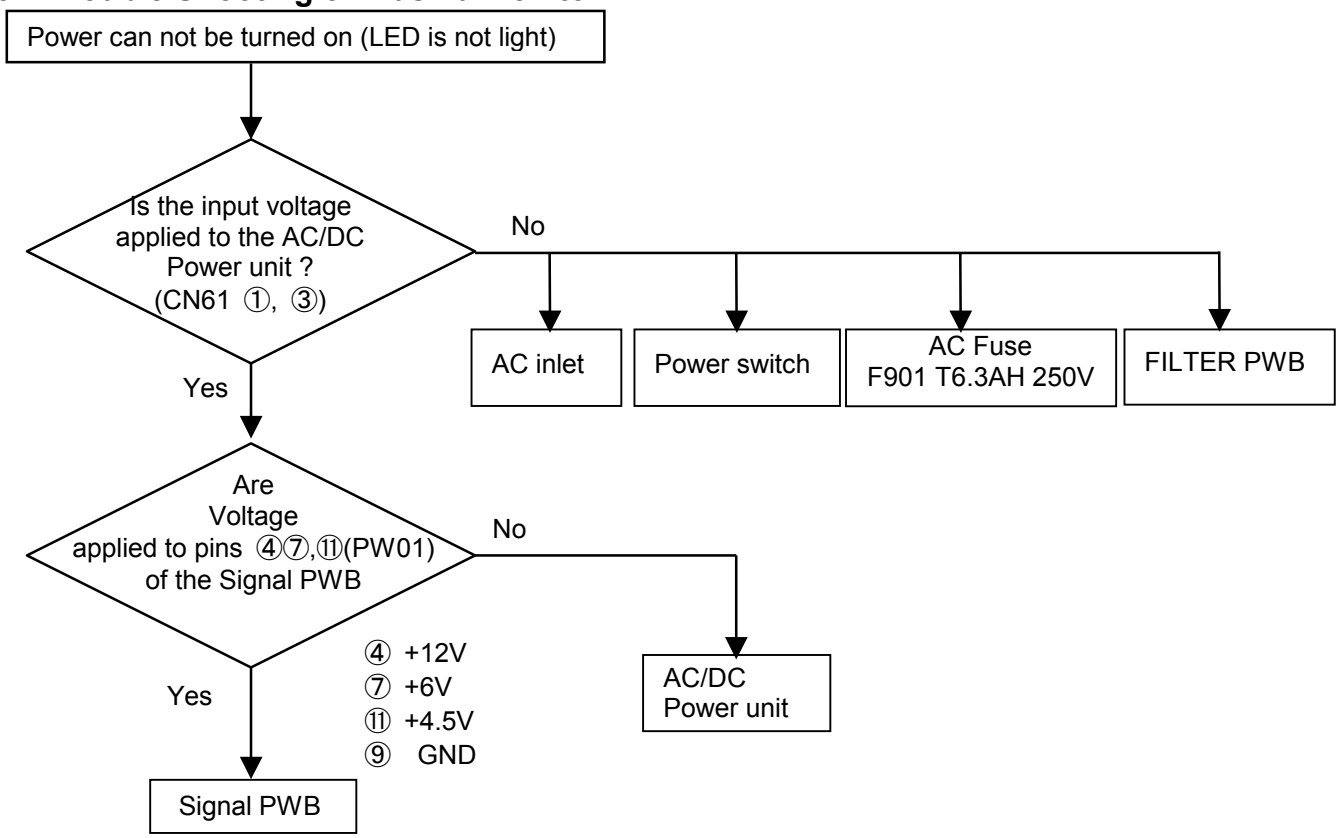
# Message table

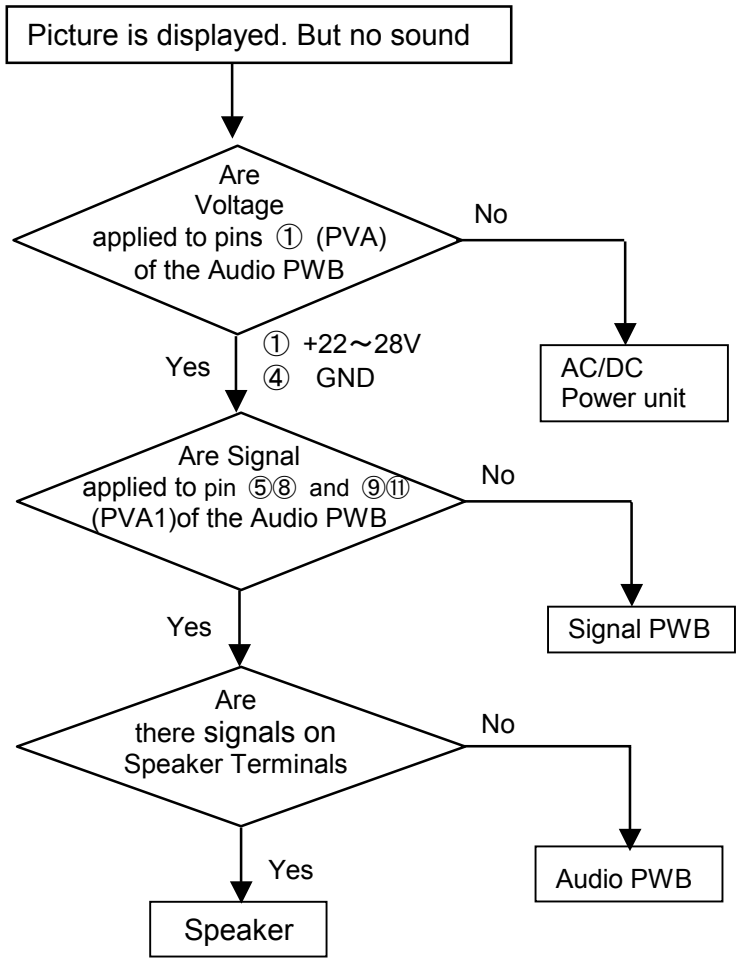
☛ Onscreen display

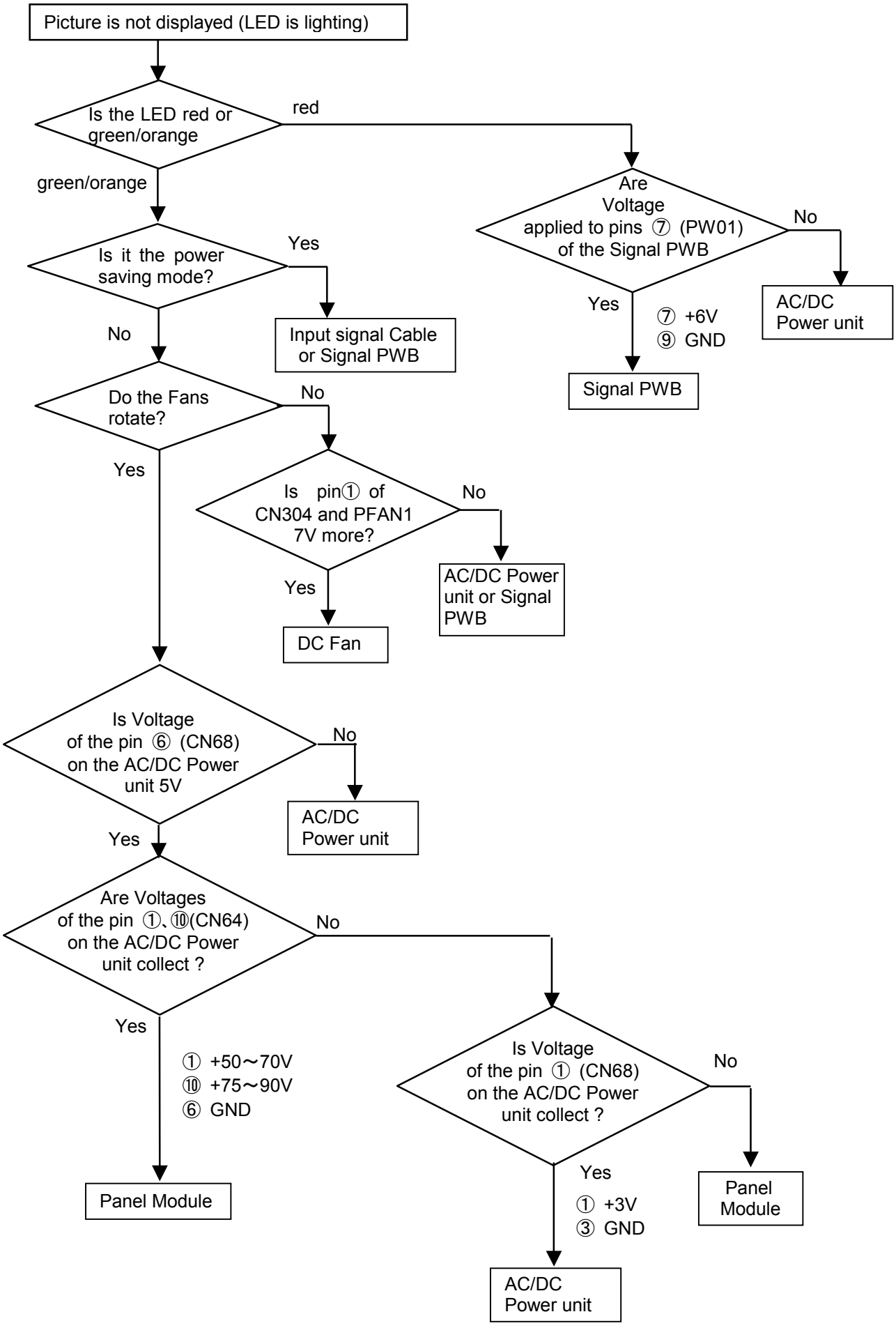
| Indication | Condition |
|---|---|
| The monitor indicates the message "NO SYNC SIGNAL". | The monitor detects no sync signal. |
| The monitor indicates the message "POWER SAVE". | After a state whereby it does not sense a sync signal for 5 seconds continued. |
| The monitor indicates the message "OUT OF FREQUENCY". | The monitor detects a sync signal which is out of specification, or unstable. |

# 5. Trouble shooting

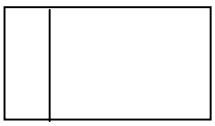
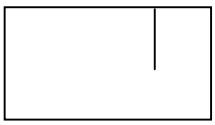
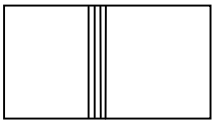
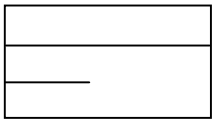
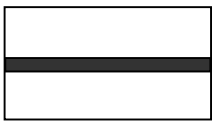
## 5.1 Trouble Shooting of Plasma Monitor




Picture is not displayed (LED is lighting)
Is the LED red or green/orange
red
green/orange
Are Voltage applied to pins ⑦ (PW01) of the Signal PWB
No
Yes
⑦ +6V
⑨ GND
AC/DC Power unit
Signal PWB
Is it the power saving mode?
Yes
No
Input signal Cable or Signal PWB
Do the Fans rotate?
No
Yes
Is pin① of CN304 and PFAN1 7V more?
No
Yes
AC/DC Power unit or Signal PWB
DC Fan
Is Voltage of the pin ⑥ (CN68) on the AC/DC Power unit 5V
No
Yes
AC/DC Power unit
Are Voltages of the pin ①、⑩(CN64) on the AC/DC Power unit collect ?
No
Yes
① +50～70V
⑩ +75～90V
⑥ GND
Panel Module
Is Voltage of the pin ① (CN68) on the AC/DC Power unit collect ?
No
Yes
① +3V
③ GND
Panel Module
AC/DC Power unit

## 5.2 Trouble Shooting of Panel Module from the point view of Fault Symptom

| NO | Fault contents | Fault status | | Suspected fault location | Analysis procedure and measure |
|---|---|---|---|---|---|
| 1 | Entire screen does not light. | After momentarily going on, the screen becomes black immediately or after a few seconds. (Main power is turned off.) | | **X-SUS**<br>**Y-SUS**<br>**Panel chassis**<br>**LOGIC**<br>**ABUSL**<br>**ABUSR** | |
| 2 | | Screen lights dimly even on the back screen. | | **LOGIC** | Replace LOGIC board |
| 3 | Vertical line | Single vertical line (of different color) |  | **Panel chassis**<br>**LOGIC** | |
| 4 | | Vertical line from the middle of effective scan area (Vertical line of different color) |  | **Panel chassis** | Replace panel chassis |
| 5 | Vertical bar | Bar width of 1/7 of horizontal size or in multiples of 1/7, is displayed. Abnormal display. |  | **Panel chassis**<br>**ABUSL**<br>**ABUSR**<br>**LOGIC**<br>Above boards are connected. | |
| 6 | | Bar width of 3/7 or 4/7 of the screen width, is displayed. Abnormal display. (Vertical line of different color) | | **ABUSL**<br>**ABUSR**<br>**LOGIC**<br>Above boards are connected. | |
| 7 | Horizontal line | Single horizontal line (No light) Or single horizontal line does not light among the effective scanning area.<br>Single horizontal line does not light. |  | **Panel chassis** | Replace panel chassis |
| 8 | Horizontal bar | Bar width of 1/8 or multiples of 1/8 of the screen height, is displayed.<br>Abnormal (Screen does not light) |  | **Panel chassis** | Replace panel chassis |
| 9 | | Bar width of 1/2 of the screen height.<br>Abnormal display (Screen does not light) | | **Panel chassis**<br>**Y-SUS**<br>**X-SUS**<br>Above boards are connected. | |

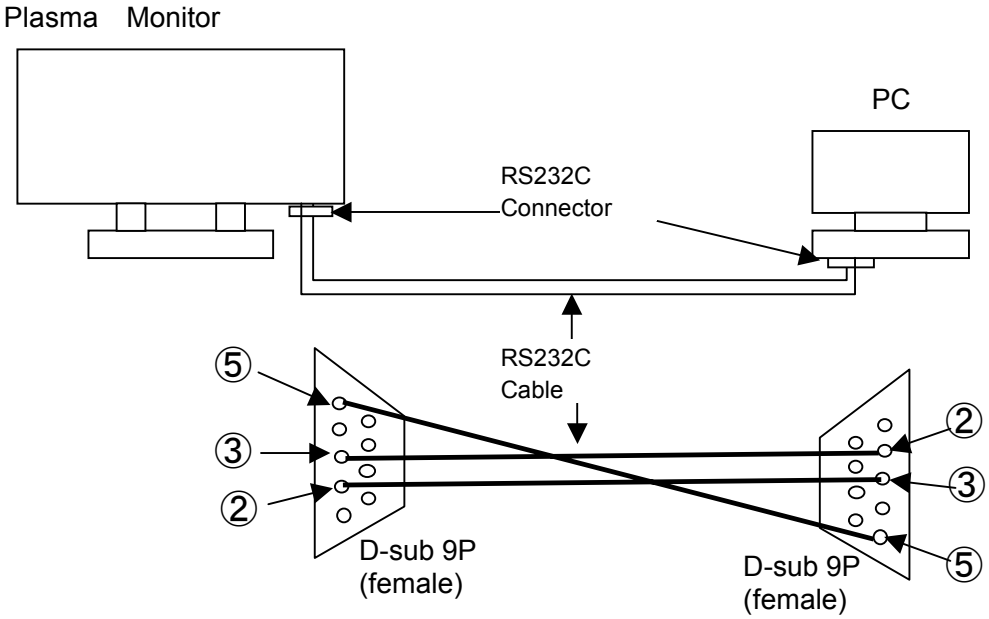
| NO | Fault contents | Fault status | | Suspected fault location | Analysis procedure and measure |
|---|---|---|---|---|---|
| 10 | Image sticking | Fixed display contents are always displayed. | ABCDE | **Panel chassis** | Perform all white heat run. After judgment, replace panel chassis |
| 11 | Stains | Oval-shaped points having abnormal luminance are scattered in the upper or lower part of screen. | | **Panel chassis** | Perform all white heat run. After judgment, replace panel chassis |

## 5.3 Trouble Shooting of Panel Module by using a Personal Computer

### 5.3.1 Setting up computer

Install the **panelinf.exe file** provided by DMD to the hard-disk of your PC.

### 5.3.2 Connecting a computer




(1) Connect the RS-232C terminal of the computer to the RS-232C terminal of the plasma monitor, using RS232C cable as above.

(2) Turn on the main power of the computer.

(3) Turn on the main power of the plasma monitor.

(4) For computer running WINDOWS:

Select **panelinf.exe** from Explorer or My Computer → **<Enter>** or **<Double Crick>**.

For computer running DOS/V:

**C : ¥ >panelinf** → **<Enter>**

(5) The following screen appears.

```
                PANEL DATA READ
    01 :  COND                    [Hex]   xx
**  02 :  ERRC(CURRENT)           [Hex]   xx
    03 :  ERRC(BEFORE1)           [Hex]   xx
    04 :  ERRC(BEFORE2)           [Hex]   xx
    05 :  ERRC(BEFORE3)           [Hex]   xx
    06 :  ERRC(BEFORE4)           [Hex]   xx
    07 :  ERRC(BEFORE5)           [Hex]   xx
    08 :  ERRC(BEFORE6)           [Hex]   xx
    09 :  ERRC(BEFORE7)           [Hex]   xx
    10 :  ERRC(BEFORE8)           [Hex]   xx
    11 :  ERRC(BEFORE9)           [Hex]   xx
    12 :  ERRC(BEFORE10)          [Hex]   xx
    13 :  ERRC(BEFORE11)          [Hex]   xx
    14 :  ERRC(BEFORE12)          [Hex]   xx
    15 :  ERRC(BEFORE13)          [Hex]   xx
    16 :  ERRC(BEFORE14)          [Hex]   xx
    17 :  ERRC(BEFORE15)          [Hex]   xx
    18 :  OPERATION HOURS         [Dec]   xx
    EXIT
```

*1 : Use COM1: the computer's communication port.

*2 : Set the communication setup as follows.

Speed : 9600 bps
Data : 7 bits
Parity : none
Stop bit : 1 bit

*3 : If the program starts up while the monitor power is not yet on, the menu screen will not be displayed. At that time, turn on the monitor power, then the program start up again.

### 5.3.3 Problem Analysis Procedure

(1) Check the error code (ERRC xx : hexadecimal number) from the CURRENT, (and BEFORE**) error code read-out menu and detect the faulty position from the following table.
ERRC 00 is not valid.

(2) Using the ↑ key or ↓ key, move the ** mark to EXIT and press <ENTER> key then the screen returns to the WINDOWS or DOS screen.

## Error code table (H1 panel)

| ERR Code | Detect position (board) | Contents | Suspected faulty board (In the order of higher probability of defect) | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | |
| 04 | LOGIC | 3.3V power voltage has dropped | LOGIC | PSU | | | | | | |
| 06 | | 3.3V power startup is faulty | X-SUS | Y-SUS | ADM1 - 8 | PSU | ABUS-L | ABUS-R | LOGIC | |
| 18 | | Internal I2C_SCL1_LOW level | LOGIC | | | | | | | |
| 19 | | Internal I2C_ACK does not respond | LOGIC | | | | | | | |
| 1C | | EEPROM initial setting is defective | LOGIC | | | | | | | |
| 1D | | EEPROM write-down is defective | LOGIC | | | | | | | |
| 1E | | EEPROM user initial setting is defective | LOGIC | | | | | | | |
| 1F | | EEPROM factory setting reading is defective | LOGIC | | | | | | | |
| 24 | X-SUS | Vex power voltage has decreased | X-SUS | LOGIC | | | | | | |
| 25 | | Vex power voltage is excessive | X-SUS | | | | | | | |
| 26 | | Vex power startup is faulty. | X-SUS | LOGIC | | | | | | |
| 28 | | Vx power voltage has dropped | X-SUS | LOGIC | | | | | | |
| 29 | | Vx power voltage is excessive | X-SUS | | | | | | | |
| 2A | | Vx power startup is faulty. | X-SUS | LOGIC | | | | | | |
| 2C | | Vpx voltage has dropped | X-SUS | LOGIC | | | | | | |
| 2D | | Vpx voltage is excessive | X-SUS | LOGIC | | | | | | |
| 30 | | Vpx1 voltage has dropped | X-SUS | LOGIC | | | | | | |
| 31 | | Vpx1 voltage is excessive | X-SUS | LOGIC | | | | | | |
| 34 | | Vpx2 voltage has dropped | X-SUS | LOGIC | | | | | | |
| 35 | | Vpx2 voltage is excessive | X-SUS | LOGIC | | | | | | |
| 39 | | Vs power current is excessive (during operation) | X-SUS | Panel | LOGIC | | | | | |
| 3B | | Vs power current is excessive (during startup) | X-SUS | Panel | LOGIC | | | | | |
| 44 | Y-SUS | Vey power voltage has dropped | Y-SUS | LOGIC | | | | | | |
| 45 | | Vey power voltage is excessive | Y-SUS | | | | | | | |
| 46 | | Vey power startup is faulty. | Y-SUS | LOGIC | | | | | | |
| 4C | | Vpy voltage has dropped | Y-SUS | LOGIC | | | | | | |
| 4D | | Vpy voltage is excessive | Y-SUS | LOGIC | | | | | | |
| 50 | | Vpy1 voltage has dropped | Y-SUS | LOGIC | | | | | | |
| 51 | | Vpy1 voltage is excessive | Y-SUS | LOGIC | | | | | | |
| 54 | | Vpy2 voltage has dropped | Y-SUS | LOGIC | | | | | | |
| 55 | | Vpy2 voltage is excessive | Y-SUS | LOGIC | | | | | | |
| 59 | | Vs power current is excessive (during operation) | Y-SUS | Panel | LOGIC | | | | | |
| 5B | | Vs power current is excessive (during startup) | Y-SUS | Panel | LOGIC | | | | | |
| 5D | | Vs power current is excessive (during operation) | Y-SUS | SDM | Panel | LOGIC | | | | |
| 61 | PSU | Vs power voltage is excessive | PSU | LOGIC | | | | | | |
| 62 | | Vs power startup is faulty. | X-SUS | Y-SUS | PSU | LOGIC | | | | |
| 64 | X-SUS Y-SUS | Vex and Vpy power voltage has dropped | LOGIC | X-SUS | Y-SUS | | | | | |
| 65 | | Vex and Vey power voltage is excessive | X-SUS | Y-SUS | | | | | | |
| 66 | | Vex and Vey power startup is faulty. | LOGIC | X-SUS | Y-SUS | | | | | |
| 68 | X-SUS | Vw power voltage has dropped | Y-SUS | X-SUS | LOGIC | | | | | |
| 69 | | Vw power voltage is excessive | X-SUS | | | | | | | |
| 6A | | Vw power startup is faulty. | Y-SUS | X-SUS | LOGIC | | | | | |
| 6C | X-SUS Y-SUS | Vpx and Vpy voltage has dropped | LOGIC | X-SUS | Y-SUS | | | | | |
| 6D | | Vpx and Vpy voltage is excessive | LOGIC | X-SUS | Y-SUS | | | | | |

| ERR Code | Detect position ( board) | Contents | Suspected faulty board (In the order of higher probability of defect) | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | (1) | (2) | (3) | (4) | (5) | (6) | (7) | |
| 81 | PSU | Va power voltage is excessive | PSU | LOGIC | | | | | | |
| 82 | | Va power startup is faulty. | ADM1 - 8 | PSU | LOGIC | ABUS-L | ABUS-R | | | |
| 99 | | Va power current is excessive (during operation) | ADM1 - 8 | ABUS-L | ABUS-R | PSU | LOGIC | | | |
| 9B | | Va power current is excessive (during startup) | ADM1 - 8 | ABUS-L | ABUS-R | PSU | LOGIC | | | |
| 9D | | Va power current is excessive (during operation) | ADM1 - 8 | ABUS-L | ABUS-R | PSU | LOGIC | | | Excess current is detected In ACCC operation. |
| A5 | ADM1 | ADM1 has abnormal heat generation. | ADM1 | PSU | LOGIC | | | | | It can possibly occur depending on screen display. |
| A9 | ADM2 | ADM2 has abnormal heat generation. | ADM2 | PSU | LOGIC | | | | | |
| AD | ADM3 | ADM3 has abnormal heat generation. | ADM3 | PSU | LOGIC | | | | | |
| B1 | ADM4 | ADM4 has abnormal heat generation. | ADM4 | PSU | LOGIC | | | | | |
| B5 | ADM5 | ADM5 has abnormal heat generation. | ADM5 | PSU | LOGIC | | | | | |
| B9 | ADM6 | ADM6 has abnormal heat generation. | ADM6 | PSU | LOGIC | | | | | |
| BD | ADM7 | ADM7 has abnormal heat generation. | ADM7 | PSU | LOGIC | | | | | |
| C5 | ADM8 | ADM8 has abnormal heat generation. | ADM8 | PSU | LOGIC | | | | | |
| E2 | LOGIC | 5V power startup is faulty. | X-SUS | Y-SUS | PANEL | PSU | ABUS-L | ABUS-R | LOGIC | |

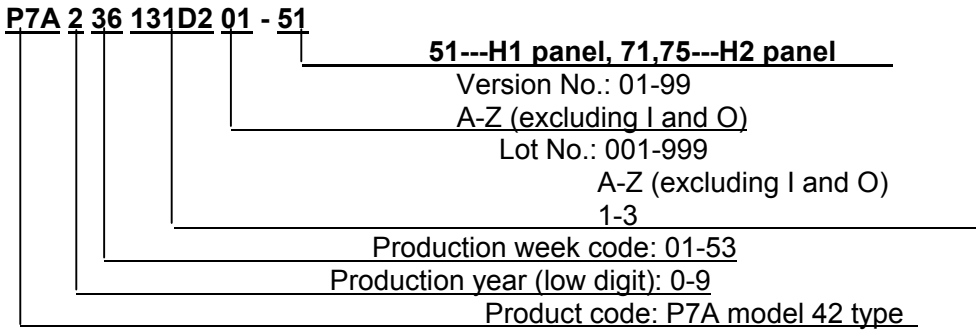
## Error code table (H2 panel)

| ERR Code | Estimate Detect position (board) | Detection position | The states in error generation | Contents | Remarks |
|---|---|---|---|---|---|
| 02 | LOGIC | Wavy pattern ROM | In startup | Wavy pattern ROM data errors | |
| 04 | | 3.3V | The ordinary time | 3.3V power voltage has dropped | |
| 06 | | | In startup | Without starting with 3.3 V voltage. | |
| 18 | | Internal I2C | - | Internal I2C_SCL1_LOW level (SCL1 error) | |
| 19 | | | | Internal I2C_ACK does not respond (SDA1 error) | |
| 1C | | EEPROM | Initialization non-execution | EEPROM initial setting is defective | |
| 1D | | | Verify error | EEPROM write-down is defective | |
| 1E | | | User sum error | EEPROM user initial setting is defective | |
| 1F | | | Factory sum error | EEPROM factory setting reading is defective | |
| 24 | X-SUS | Vex | The ordinary time | Vex power voltage has dropped | |
| 25 | | | | Vex power voltage is excessive | |
| 26 | | | In startup | Vex power startup is faulty. | |
| 28 | | Vx | The ordinary time | Vx power voltage has dropped | |
| 29 | | | | Vx power voltage is excessive | |
| 2A | | | In startup | Vx power startup is faulty. | |
| 2C | | Vpx | The ordinary time | Vpx 1,2 power voltage has dropped | |
| 2D | | | | Vpx 1,2 power voltage is excessive | |
| 30 | | Vpx1 | The ordinary time | Vpx1 power voltage has dropped | |
| 31 | | | | Vpx1 power voltage is excessive | |
| 34 | | Vpx2 | The ordinary time | Vpx2 power voltage has dropped | |
| 35 | | | | Vpx2 power voltage is excessive | |
| 39 | | Isx | The ordinary time | Isx power current is excessive | |
| 3B | | | In startup | Isx power current is excessive (in startup) | |
| 44 | Y-SUS | Vey | The ordinary time | Vey power voltage has dropped | |
| 45 | | | | Vey power voltage is excessive | |
| 46 | | | In startup | Vey power startup is faulty. | |
| 4C | | Vpy | The ordinary time | Vpy1,2 power voltage has dropped | |
| 4D | | | | Vpy1,2 power voltage is excessive | |
| 50 | | Vpy1 | The ordinary time | Vpy1 power voltage has dropped | |
| 51 | | | | Vpy1 power voltage is excessive | |
| 54 | | Vpy2 | The ordinary time | Vpy2 power voltage has dropped | |
| 55 | | | | Vpy2 power voltage is excessive | |
| 59 | | Isy | The ordinary time | Isy power current is excessive | |
| 5B | | | In start | Isy power current is excessive (in startup) | |
| 5D | | Isp | The ordinary time | SDM power current is excessive | |
| 61 | X-SUS Y-SUS | Vs | The ordinary time | Vs power voltage is excessive | |
| 62 | | | In startup | Vs power startup is faulty. | |
| 64 | | Ve | The ordinary time | Ve power voltage has dropped | |
| 65 | | | | Ve power voltage is excessive | |
| 66 | | | In start | Ve power startup is faulty. | |
| 68 | | Vw | The ordinary time | Vw power voltage has dropped | |
| 69 | | | | Vw power voltage is excessive | |
| 6A | | | In startup | Vw power startup is faulty. | |
| 6C | | Vp | The ordinary time | Vp power voltage has dropped | |
| 6D | | | | Vp power voltage is excessive | |
| 81 | | | | Va power voltage is excessive | |
| 82 | | | In startup | Va power startup is faulty. | |
| 99 | | Ia | The ordinary time | Ia power current is excessive | |
| 9B | | | In startup | Ia power current is excessive (during startup) | |
| 9D | | ACCC | The ordinary time | IaACCC power current is excessive | |
| A5 | ADM | ADM1 | The ordinary time | ADM1 has abnormal heat generation.(shutdowns) | |
| A9 | | ADM2 | | ADM2 has abnormal heat generation.(shutdowns) | |
| AD | | ADM3 | | ADM3 has abnormal heat generation.(shutdowns) | |
| B1 | | ADM4 | | ADM4 has abnormal heat generation.(shutdowns) | |
| B5 | | ADM5 | | ADM5 has abnormal heat generation.(shutdowns) | |
| B9 | | ADM6 | | ADM6 has abnormal heat generation.(shutdowns) | |
| BD | | ADM7 | | ADM7 has abnormal heat generation.(shutdowns) | |
| C5 | ADM | ADM8 | The ordinary time | ADM8 has abnormal heat generation.(shutdowns) | |
| E2 | | | In startup | Vcc power startup is faulty. | |

## 5.4 Checking serial ID number of Panel Module (14 digits)

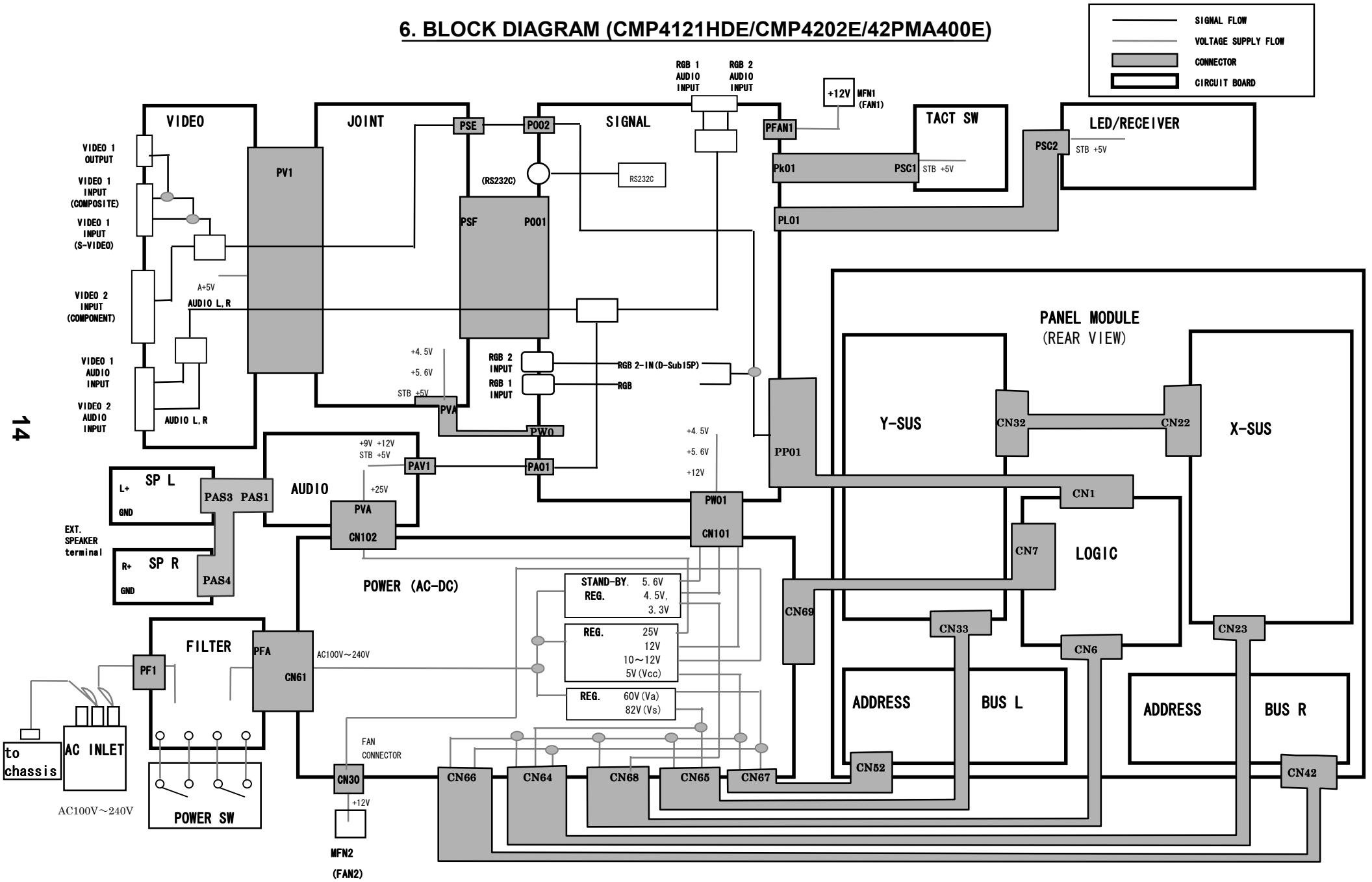
The serial ID number of the panel module that is brought in for service and that of the completed panel chassis has the structure as shown below.

The serial ID number is shown on the bar code label that is attached to the rear of the chassis (aluminum).

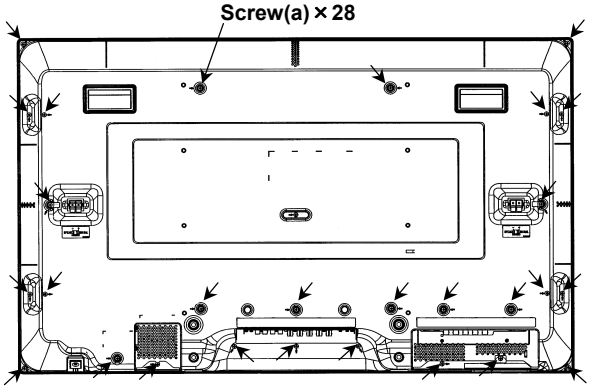

P7A 2 36 131D2 01 - 51
51---H1 panel, 71,75---H2 panel
Version No.: 01-99
A-Z (excluding I and O)
Lot No.: 001-999
A-Z (excluding I and O)
1-3
Production week code: 01-53
Production year (low digit): 0-9
Product code: P7A model 42 type

| Model / Panel Module | CMP4121HDU-512/512S/512SH/512SA | CMP 4121HDE-302/303S | CMP 4201U/J | 42PMA 400E/A/B | CMP 4202U/E | CMP 4203W |
|---|---|---|---|---|---|---|
| H1 panel Module | ○ | ○ | | | | ○ |
| H2 panel Module | | | ○ | ○ | ○ | |

# 6. BLOCK DIAGRAM (CMP4121HDE/CMP4202E/42PMA400E)



# 7. Disassembly diagram




## (1) Remove Back Cover

Lay down the Plasma display so that the face is down on the soft thick (over 50mm) cushion.

Be careful not to be damaged the face of Front Filter.

Remove 28screws(a) then remove Back Cover.

At this time be careful not to be damaged edges of Back Cover and its coated face.

## (2) Remove Filter PWB

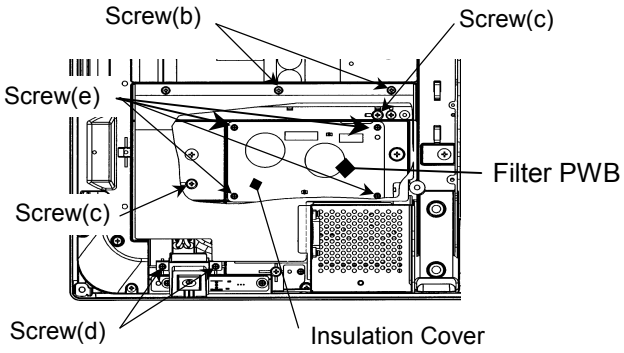
Remove 2screws(b) and remove "Insulation Cover".

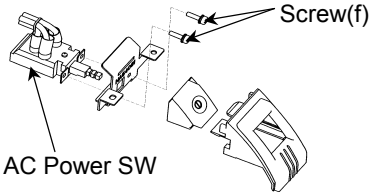
Remove 2screws(c) of earth wires.

Disconnect PFA(EV-6P) and PF1(EV-3P) connectors.

Remove 2screws(d) of AC Power Switch Folder and remove 4screws(e) and remove Filter P.W.B.

Remove 2 screws(f) and remove AC Power Switch.




## (3) Remove Signal PWB with PWB MTL,

;Signal PWB

Disconnect PP01(LVDS), PW01(EH-13P), P001(FHR-50), PA01(PH-13P), PL01(PH-6P),PK01(PH-5P),PW02( PH-7P),PFAN1(PH-3P)and P002(PH-12P) connectors.

Be careful not to be damaged the PP01 and P001 connector holders.

Remove 4screws(i) then remove Signal P.W.B with SIG PWB MTL.

## (4)-1 Video Unit/JOINT PWB and Audio PWB with PWB MTL.

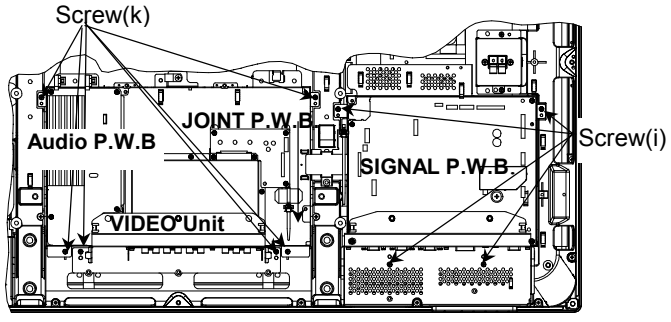
;JOINT PWB

Disconnect PAV(PH-7P), PSE(PH-12P), and PSF(FHR-50) connectors.

;Audio PWB

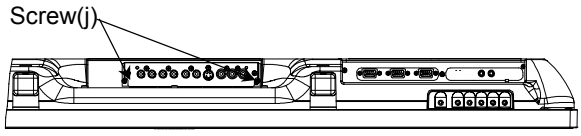
Disconnect PVA, PAS1, and PAV1 connectors.

Remove 6 screws(k) then remove VIDEO PWB MTL.




## (4)-2 VIDEO Unit

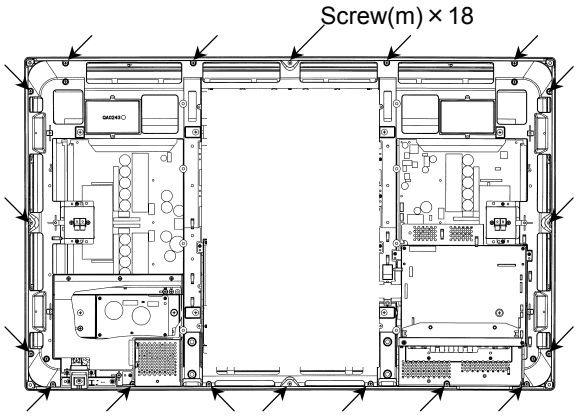
Remove 2screws(j) then pull out Video Unit.



## (5) Remove Front Frame

Remove 18screws(m) then remove Front Frame.

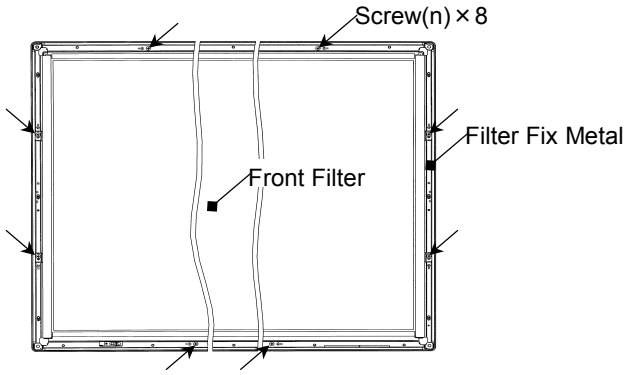
Be careful not to fall down the Front Frame when remove 18screws(m).




## (6) Remove Front Filter (Glass)

Remove 8screws(n), and remove Filter Fix Metal then remove Front Filter.

When attach the new Front Filter to the Front Frame, locating the conducting electrode side to the inside, and attach Filter Fix Metal.




## (7) Remove Fan (MFN1)

Remove 1screw(o) and disconnect PFAN1(PH-3P) connector,

then remove Fan. (only H1 panel)

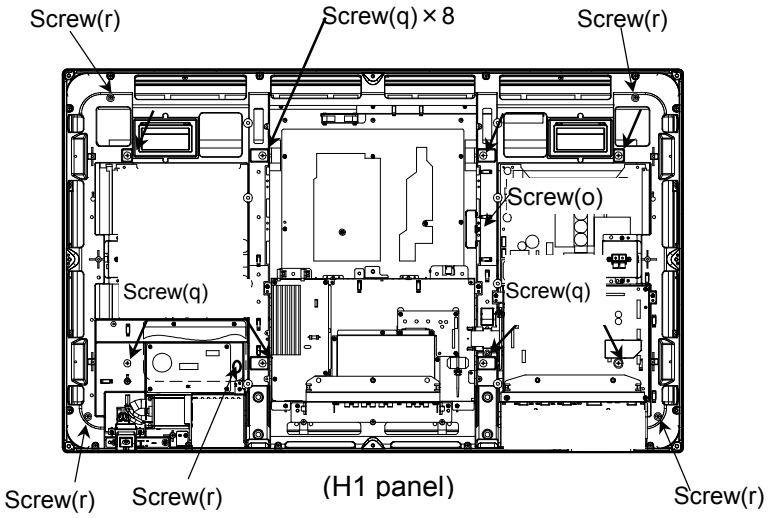
## (8) Remove Main Frame

Lay down the Plasma Display so that the face is down on the soft thick (over 50mm) cushion. Be careful not to be damaged the face of Display Panel.

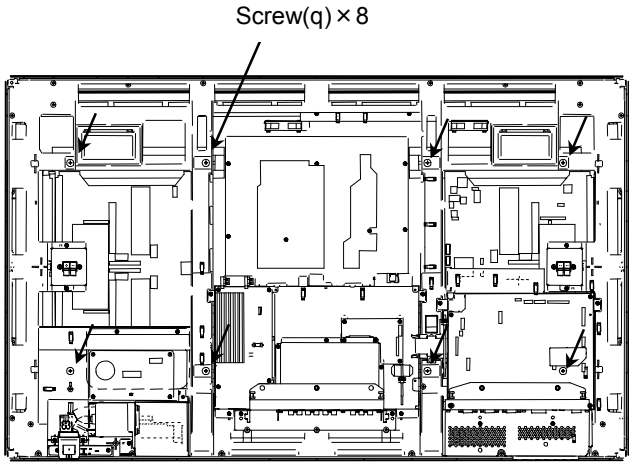
Disconnect CN61(EV-6P) connector.

(H1 panel)
Remove 8 screws(q) and 5screws(r) then disconnect CN1(LVDS) connector which is attached Panel Module's Logic Board. Remove Main Frame.

(H2 panel)
Remove 8 screws(q) then disconnect CN1(LVDS) connector which is attached Panel Module's Logic Board. Remove Main Frame.




(H1 panel)

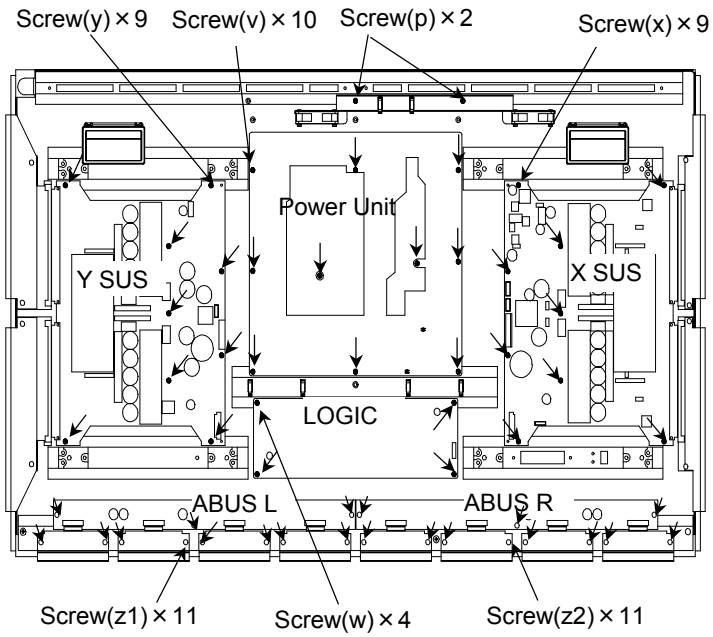



(H2 panel)

(9) Remove Power Unit P.W.B.

Disconnect CN101(EH-13P), CN102(EH-6P)CN64(VH-10P), CN65(VH-9P),CN66(PH-7P), CN67(PH-7),CN68(PH-6P) and CN69 ( FLAT Cable).

Be careful not to be damaged the CN69 connector folder. Remove 10 screws(v) then remove Power Unit P.W.B.




(10) Remove Fan (H1/H2 panel)

Disconnect CN304 connector.

Remove 2screws(p) then remove Fan fix metal.

(11) Remove Panel LOGIC P.W.B.

Disconnect CN1, CN2, CN3, CN4, CN5, CN6 and CN7 connectors. Be careful not to be damaged the CN2, CN3, CN4, CN5 and CN7 connector folders. Remove 4screws(w) then remove Panel LOGIC P.W.B.

(12) Remove Panel X-SUS P.W.B.

Disconnect CN21, CN22 and CN23 connectors. Be careful not to be damaged the CN21 connector folder.

Remove 9screws(x) then remove Panel X-SUS P.W.B. pulling out from CN24 and CN25 connectors.

(13) Remove Panel Y-SUS P.W.B.

Disconnect CN31, CN32 and CN33 connectors. Be careful not to be damaged the CN31 connector folder. CN34 and CN35 connector Remove 9 screws(y) then remove Panel Y-SUS P.W.B. pulling out from CN34 and CN35 connectors

(14) Remove Panel ABUS R P.W.B

Disconnect CN41, CN42, CN43, CN44, CN45 and CN46 Connectors. Be careful not to be damaged the CN41, CN43, CN44, CN45 and CN46 connectors folders.

Remove 11 screws (z2), then remove Panel ABUS R P.W.B.

(15) Remove Panel ABUS L P.W.B

Disconnect CN51, CN52, CN53, CN54, CN55 and CN56 connectors. Be careful not to be damaged the CN51, CN53, CN54, CN55 and CN56 connector folders.

Remove 11 screws (z1), then remove Panel ABUS L P.W.B.

# 8. Re-Adjustment

After changing the Panel Module, re-adjustment is needed according to the item 8.1.to 8.5. For Power Unit, item 8.1; for Signal Board, item 8.2 to 8.5* and for Video Board, item 8.2, 8.4,8.5 are needed.

It is recommended to start re-adjustment after 30 minutes warm-up with the Burn-in signal.

*) When it is not inserted into VIDEO Unit of optional Board in Signal Board replacement, VIDEO Unit becomes necessary. In this case, insert the dummies' VIDEO unit and execute the above adjustment item.

**How to set to Burn-in signal**

**(red, green, blue, white, yellow, cyan, magenta, black signal)**

Turn off the sub power button (or power button on the Remote Controller), then turn on the SUB POWER button for more than 5 seconds while you keep pushing VOLUME▼ and RECALL buttons located on the bottom of the set.

When you fall out from Burn-in mode, turn off the sub power button (or power button on the Remote Controller),then turn on the SUB POWER button for more than 5 seconds while you Keep pushing VOLUME▼ button located on the bottom of the set.

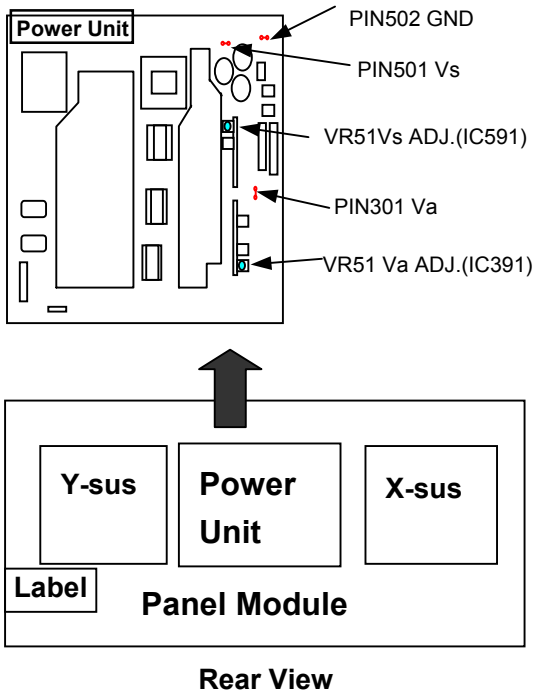
## 8.1 Vs and Va voltage adjustment on Power Unit

**How to prepare**

1.Connect the DC Voltmeter to the Vs test point and the GND point (or the Va test point and the GND point) on the Power Unit.

2.Connect VGA (75), no-setup, and all black signal to RGB input terminal.

3.Check the amount of Vs and Va voltages printed on the label located lower left side on the Panel Module.




**Rear View**

**How to adjust**

1.If the difference of the printed voltage of Vs and the value of DC Voltmeter of Vs is over ±0. 4 V, adjust the Vs ADJ Volume located upward on the Power Unit to within ±0. 4 V.

2. If the difference of the printed voltage of Va and the value of DC Voltmeter of Va is over ±0. 4 V, adjust the Va ADJ Volume located upward on the Power Unit to within ±0. 4 V.

## 8.2 Personal Computer (PC) input and Video input Automatic amplitude adjustment

**How to set to service adjustment mode**

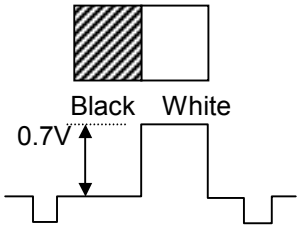
Turn off the sub power button (or power button on the Remote Controller),
Then turn on the SUB POWER button for more than 5 seconds while you keep pushing INPUT SELECT and RECALL buttons located on the bottom of the set.

**Preparation**

1. Indicate service adjustment mode.
2. Select SHIP.2, then press [RECALL] button more than 3 seconds by Remote Controller.
   (The screen disappears, and EEPROM is initialized.)
   A service adjustment mode screen appears after initialization end again.

*** : Select items : Press [ ▲, ▼ ] botton of Remote Controller.**
**Adjust Data : Press [ ◀ , ▶ ] botton of Remote controller.**
**Memorize the data : Press [ ENTER] botton of Remote controller.**

**Adjustment Signal**




Black pattern : Set pedestal level.
This signal must not insert character.

*Fig.1 Adjustment Signal

**How to adjust (VIDEO input)**

1.Input 525p(480p) adjustment signal into VIDEO2 input terminal.
2.Change CONTRAST of the MENU screen from DYNAMIC to LINEAR.
3.Service adjustment mode screen again
4.Select No.259. (RGB ADJ.)
5.Press [ENTER] button more than 2 seconds. * Start the automatic adjustment.
6.Complete the adjustment after disappear ADJUSTMENT indication.
7.Change CONTRAST of the MENU screen from LINER to DYNAMIC again.

**How to adjust (PC input)**

1.Input VGA (60Hz) adjustment signal into RGB input terminal.
2.Indicate service adjustment mode.
3.Select No.259. (RGB ADJ.)
4.Press [ENTER] button more than 2 seconds. * Start the automatic adjustment.
5.Complete the adjustment after disappear ADJUSTMENT indication.

*Never adjust without use our specify signal.
If press [ENTER]button at No.259 by mistake, the picture becomes abnormal (Black level, Contrast and Color.)

## 8.3 Color temperature adjustment for PC

**How to prepare**

1.Set signal generator output signal to Full White.
2.Signal condition
VGA (75): 0.7Vp-p, Set up level: 0V
3.Input the signal into RGB (D-sub) terminal.
4.Set Picture setting up to reference.

**How to adjust**

1.Indicate service adjustment mode and adjust as follows by Remote Controller.
2.Measurement probe of CRT Color Analyzer CA-100 is set on the center of screen.
3.Adjust color temperature as follows by reducing one or two numbers of No.9, 10, 11.
(At least one of these datas should be 255.)
**PC color temperature (COOL)**
**x=0.285±0.005, y=0.294±0.005, at 9300 K**
4. Adjust color temperature as follows by reducing one or two numbers of No.12, 13, 14.
(At least one of these datas should be 255.)
**PC color temperature (NORMAL)**
**x=0.300±0.005, y=0.298±0.005, at 7600 K**
5.Adjust color temperature as follows by reducing one or two numbers of No.15, 16, 17.
(At least one of these datas should be 255.)
**PC color temperature (WARM)**
**x=0.314±0.005, y=0.327±0.005, at 6500 K**

**Suggestion**

1.Luminance of panel surface is less than 20 lux to arrange adjustment environment.
2.Adjstment is **reduce value adjustment only**. (Impossible to increase value adjustment.)
3.Color select mode is automatically set to COOL while adjustment No.9, 10 and 11.
4.Color select mode is automatically set to NORMAL while adjustment No.12, 13 and 14.
5.Color select mode is automatically set to WARM while adjustment No.15, 16 and 17.

## 8.4 Color temperature adjustment for Video

**How to prepare**

1.Set signal generator output signal to Full White.
2.Signal condition
480i/60Hz Component signal
Video level: 0.714Vp-p,
Sync level: 0.286Vp-p
Set up level: 0V
3.Input the signal into VIDEO2 terminal.
4.Set Picture setting up to reference.
5.Make sure that CONTRAST is LINEAR.
6.Do after color temperature adjustment of PC.

**How to adjust**

1.Indicate service adjustment mode and adjust as follows by Remote Controller.

2.Measurement probe of CRT Color Analyzer CA-100 is set on the center of screen.

3.Adjust color temperature as follows by reducing one or two numbers of No.0, 1, 2.

(At least one of these datas should be 255.)

**VIDEO color temperature (COOL)**

**x=0.285±0.005, y=0.294±0.005, at 9300 K**

4. Adjust color temperature as follows by reducing one or two numbers of No.3, 4, 5.

(At least one of these datas should be 255.)

**VIDEO color temperature (NORMAL)**

**x=0.300±0.005, y=0.298±0.005, at 7600 K**

5.Adjust color temperature as follows by reducing one or two numbers of No.6, 7, 8.

(At least one of these datas should be 255.)

**VIDEO color temperature (WARM)**

**x=0.314±0.005, y=0.327±0.005, at 6500 K**

**Suggestion**

1.Luminance of panel surface is less than 20 lux to arrange adjustment environment.

2.Adjstment is **reduce value adjustment only**. (Impossible to increase value adjustment.)

3.Color select mode is automatically set to COOL while adjustment No.0, 1 and 2.

4.Color select mode is automatically set to NORMAL while adjustment No.3, 4 and 5.

5.Color select mode is automatically set to WARM while adjustment No.6, 7 and 8.

## 8.5 Reset adjustment

Always set to factory Setting mode, to prevent error picture, Reset should be done.

When above adjustment is finished, turn off the SUB POWER button (or power button on the Remote Controller) and Main power Switch.

**How to set to factory Setting**

Receive a signal in RGB1.

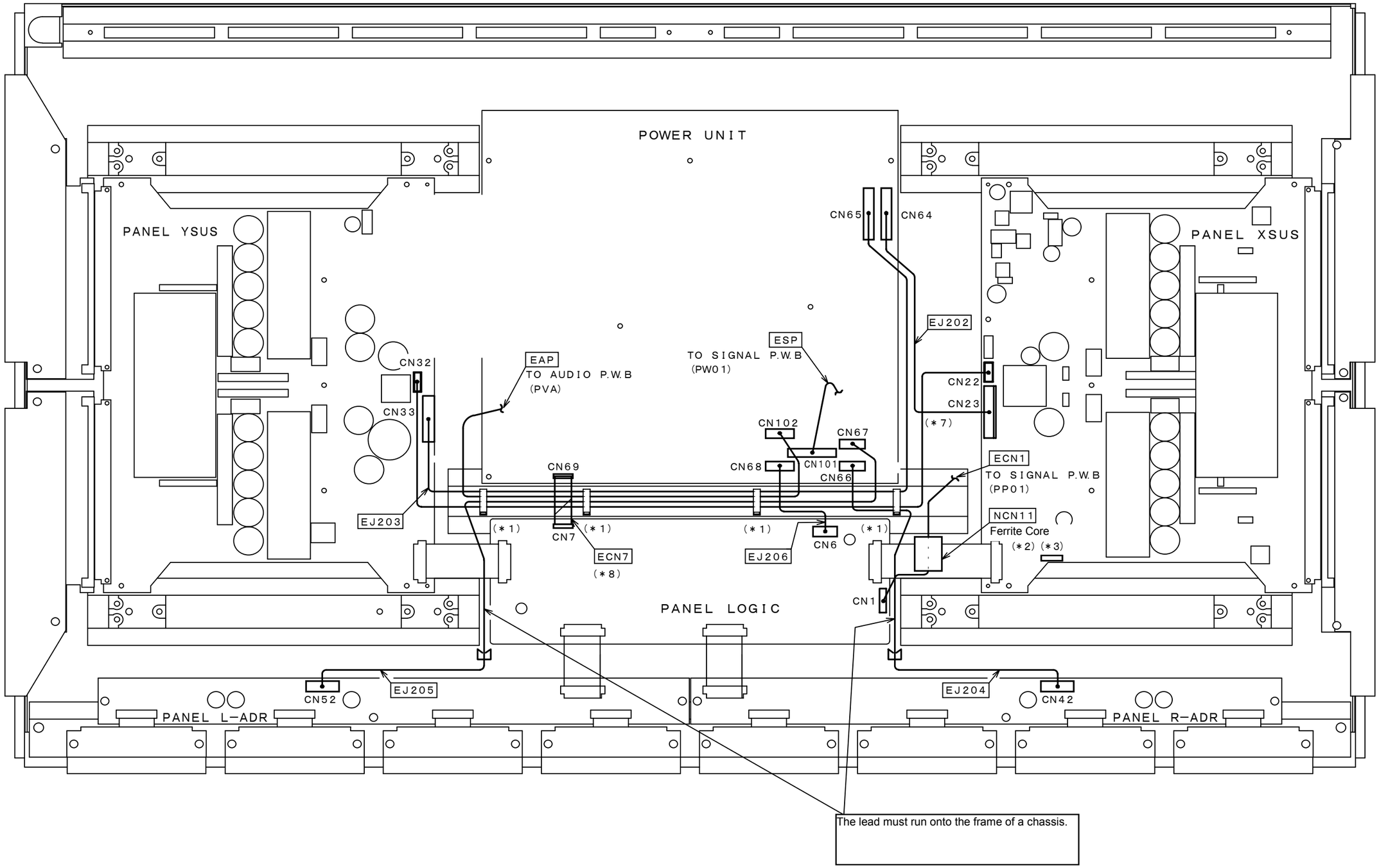
Turn off the SUB POWER button (or power button on the Remote Controller),

Then turn on the sub power button for more than 5 seconds while you keep pushing SIZE and RECALL buttons located on the bottom of the set.

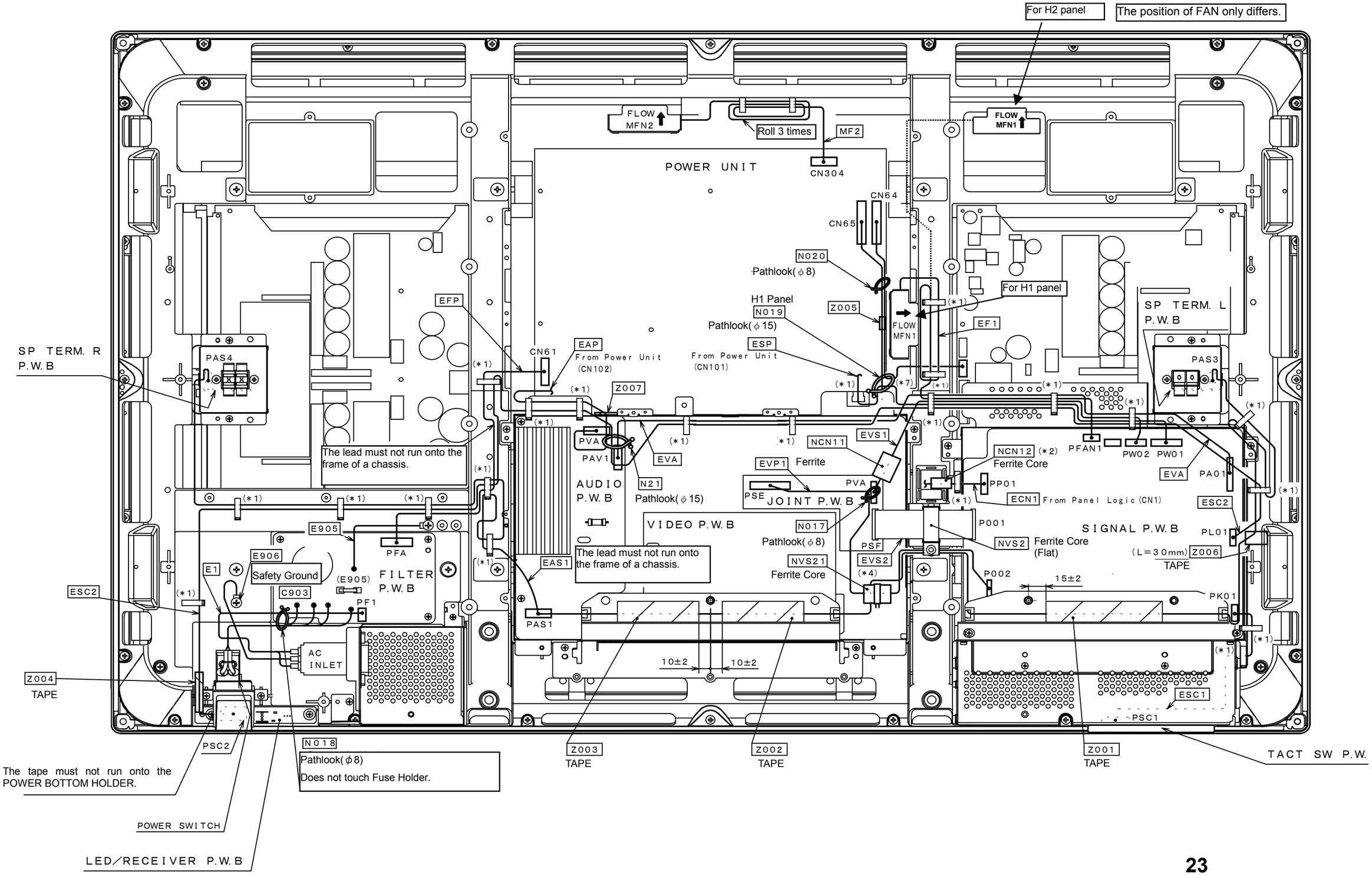
You fall out from factory Setting mode, turn off the SUB POWER button (or power button on the Remote Controller).

# 9 Wiring Drawing

## 9.1 Panel Module and Power Unit section



# 9.2 Plasma Monitor（H1/H2 panel）



## 10.Replacement Parts list

**Product Safety Note** : Components marked a ⚠ have special characteristics important to safety. Don't degrade the safety of the receiver through improper servicing.

| | No. | Parts No. | Parts Name | Remarks |
|---|---|---|---|---|
| 1. | FRONT FRAME | QD33482 | FRONT FRAME SASS'Y (Black) | |
| | | QD33489 | FRONT FRAME SASS'Y (Silver) | |
| 2. | POWER BUTTON | PC05361 | 4121HD POWER SW BUTTON | |
| 3. | POW. BUTTON PANEL | PH31141 | POWER BUTTON PANEL | |
| 4. | BACK COVER ASS'Y | QA02546 | COVER ASS'Y 42 PD1A | For CMP4121HD/CMP420*, 42PMA400E |
| | | QL07611 | EARTH LABEL (only for Japan disti.) | Put on above Cover Ass'y |
| | | QA02547 | COVER ASS'Y (with Video unit) | For CMP4121HDU-512SH/SA And 42PMA400A/B |
| | | QA02548 | COVER ASS'Y –4203W | For CMP4203W |
| 5. | DC FAN | GS00691 | 60 FHI DC FAN ASS'Y | |
| 6. | SIGNAL PWB ASS | JP05963 | PD1A SIGNAL PWB ASS'Y | |
| | SIGNAL PWB ASS | JP05951 | PD1A SIGNAL PWB ASS'Y (w) | For CMP4203W |
| 7. | VIDEO PWB ASS | JP05972 | PD1A VIDEO PWB ASS'Y | CMPAV14 VIDEO UNIT |
| 8. | AUDIO/FILTER PWB ASS | JP06181 | PD1A AUDIO/FILTER PWB ASS'Y | |
| | AUDIO/FILTER PWB ASS | JP06182 | PD1A AUDIO/FILTER PWB ASS'Y | For CMP4203W |
| 9. | JOINT PWB ASS | JP05982 | PD1A JOINT PWB ASSY | |
| ⚠ 10. | FUSE | FN00439 | FU-6R3A-JUT-5.5x20 | |
| 11. | FILTER PANEL | KS04431 | CMP4121HD FRONT FILTER (39%) | CMP4121HDU/E-512** |
| | | KS04434 | CMP420* FRONT FILTER (39%) | CMP4201*,42PMA400A/B |
| | | KS04435 | 42PMA400E FRONT FILTER(32%) | For 42PMA400E |
| ⚠ 12. | POWER CABLE | EV00152 | COD-UL/CSA AC (GRAY) | For USA |
| | | EV01611 | COD 125V15A-JAPAN | For JAPAN |
| 13. | POWER UNIT | HA01132 | POWER UNIT MPF7405 | |
| 14. | USER'S MANUAL | QR54121 | CMP4121HDU/CMP4201U MANUAL | For USA/AU/HK/J |
| | | QR54131 | CMP4201E/42PMA400E MANUAL | For E |
| 15. | REMOTE CONTROLLER | HL01901 | RMLCP-RD3 | |
| 16. | CONT SW BUTTON | PC05351 | CONTROL SW BUTTON | |
| 17. | CONT SW HOLDER | PH31091 | CONTROL SW HOLDER | |
| 18.. | TOP & BOTTOM CUSHION | SP08522 | CMP420* TOP CUSHION | |
| | | SP08532 | CMP420* BOTTOM CUSHION | |
| 19. | CARTON BOX & TRAY | SG33634 | BOX CMP4121HD | For CMP4121HD |
| | | SG33635 | BOX CMP4201 | For CMP4201 |
| | | SG33636 | BOX 42PMA400 | For 42PMA400 |
| | | SG33637 | BOX CMP4203 | For CMP4203 |
| | | SG33639 | BOX CMP4202 | For CMP4202 |
| | | SG33131 | TRAY CMP4121HD | |
| 20. | LAMINATE BAG | SU02363 | LAMINATE BAG W42PDH2100 | |
| 21. | GRIP JOINT | MM00182 | GRIP JOINT | |
| 22. | FERRITE CORE | BZ10611 | LX-FSRC310120RN000T | NVS2 |

## Panel Module Parts(H1 panel)

| No. | Parts Name ⚠ | Parts No.(DMD) | Parts No. (FHP) | Remarks |
|---|---|---|---|---|
| 1. | LOGIC PWB ASS'Y | JP05321 | FPF16R-LGC5006 | Please purchase these parts of Panel Module from FMA, FME or FMAL. Parts No.(DMD) is available only in Japan.(DMD) |
| 2. | X-SUS PWB ASS'Y | JP05331 | FPF16R-XSS5002 | |
| 3. | Y-SUS PWB ASS'Y | JP05341 | FPF16R-YSS5003 | |
| 4. | ABUS-L PWB ASS'Y | JP05351 | FPF16R-ABL5004 | |
| 5. | ABUS-R PWB ASS'Y | JP05361 | FPF16R-ABR5005 | |
| 6. | CABLE LOGIC TO X-SUS | EZ01453 | FRF16R-CBL200104 | |
| 7. | CABLE LOGIC TO Y-SUS | EZ01454 | FRF16R-CBL200106 | |
| 8. | CABLE LOGIC TO ABUS | EZ01451 | FRF18R-CBL200112 | |
| 9. | CABLE X-SUS TO Y-SUS | EZ01461 | FRF18R-CBL100103 | |
| 10. | PANEL MODULE | DD00511 | FPF16R-PNLUB1 | |

## Panel Module Parts(H2 panel)

| No. | Parts Name ⚠ | Parts No.(DMD) | Parts No. (FHP) | Remarks |
|---|---|---|---|---|
| 1. | LOGIC PWB ASS'Y | TS04216 | FPF16R-LGC500703 | Please purchase these parts of Panel Module from FMA, FME or FMAL. Parts No.(DMD) is available only in Japan.(DMD) |
| 2. | X-SUS PWB ASS'Y | TS04212 | FPF16R-XSS5008 | |
| 3. | Y-SUS PWB ASS'Y | TS04213 | FPF16R-YSS5009 | |
| 4. | ABUSL PWB ASS'Y | TS04214 | FPF16R-ABL5010 | |
| 5. | ABUSR PWB ASS'Y | TS04215 | FPF16R-ABR5011 | |
| 6. | PANEL MODULE | DD00552 | FLTFPF42C128128UB-75 | |